NEWSPRINT PRODUCTION FROM HARDWOODS

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EIGHTY-THIRD CONGRESS

SECOND SESSION

CONCERNING THE

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OF THE

DEPARTMENT OF COMMERCE

ON

STUDY OF NEWSPRINT EXPANSION

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NEWSPRINT PRODUCTION FROM HARDWOODS

THURSDAY, AUGUST 5, 1954

UNITED STATES HOUSE OF REPRESENTATIVES,
COMMITTEE ON THE JUDICIARY,
Washington, D. C.

The committee met, pursuant to call, at 10:35 a. m., in room 346, Old House Office Building, Hon. Chauncey W. Reed, chairman, presiding.

The CHAIRMAN. The committee will be in order.

The committee meets this morning in open session to receive the second progress report of the Department of Commerce on its study of newsprint expansion.

This report is entitled "Newsprint Production From Hardwoods."

The great importance of newsprint to our Nation was well expressed in the September 1953 final report of the Special Antitrust Subcommittee of this committee on the newsprint problem, as follows:

> A free press is the very cornerstone of our representative form of government. The founders of our country recognized that a Federal Republic could not prosper without certain minimum guaranties for freedom of expression and opinion. The concept of freedom to publish was not restricted to the large metropolitan dailies whose circulations now run into the millions, nor even to the small-town dailies and country weeklies which reach the grassroots areas of the country.
>
> It was designed to embrace all media of expression of free thought, including organs of religious, of labor, of political, and even of fraternal organizations. It was intended to include the expression and transmission of the many diverse ideas and viewpoints which would spring from the minds of a polyglot and diverse population.
>
> Yet the freedom to write, to report news, to express ideas, to differ—all these become meaningless if the materials for mass communication are lacking. A newspaper cannot spread its news and editorials without newsprint any more than can an electric bulb transmit light without a filament.
>
> It is therefore readily apparent why there has been such great solicitude concerning newsprint in legislative chambers as well as among publishers, pulp and paper producers, and the public at large.

The activity of the Committee on the Judiciary in recent years in the field of newsprint has resulted in some of the most important and significant developments to emerge from over a decade of congressional studies and investigations in this area of the economy.

These signal contributions have been evolved out of a joint program with the Department of Commerce to encourage and assist in the expansion of newsprint productive capacity by private industry.

To my mind, the program which we have been pursuing in this field is a prime example of what can be accomplished to further the true objectives of the antitrust laws by positive Government action designed to promote and maintain a healthy condition in one of our basic industries.

The initial progress report of the Department of Commerce on its Study of Newsprint Expansion, presented to the committee in October 1952, contained an extensive and detailed report on the use of sugarcane bagasse as a raw material for newsprint production.

That work was an outstanding contribution to what is termed "the newsprint problem."

The report submitted today is another work of outstanding quality and monumental importance in this field and deals with another source of newsprint; namely, the vast present and prospective supply of hardwoods with which large areas of our country are now covered, or on large areas of which such timber may be grown.

The committee's program contemplates further reports by the Department of Commerce on additional sources of raw materials for newsprint production, principally the possible utilization of Alaskan timber resources and the deinking and reuse of wastepaper.

Just credit must be given to Secretary Weeks for undertaking, at the request of the committee, to have prepared and presented the series of comprehensive reports on the newsprint problem. That undertaking represents an outstanding cooperative endeavor of the legislative and executive branches of the Government—in the public interest.

We are pleased to have with us this morning Mr. Lothair Teetor, Assistant Secretary of Commerce for Domestic Affairs.

Mr. Teetor.

STATEMENT OF HON. LOTHAIR C. TEETOR, ASSISTANT SECRETARY OF COMMERCE FOR DOMESTIC AFFAIRS

Secretary TEETOR. Mr. Chairman and members of the committee, I am glad to appear before this committee today to present, on behalf of the Department of Commerce, a brief report on the current newsprint situation and a comprehensive and exhaustive report with respect to newsprint production from hardwoods.

In presenting the latter report, Mr. Chairman, you had requested that we review the current newsprint supply-demand situation and submit suggestions and recommendations with respect to future studies by our Department and your committee on the encouragement of expansion of newsprint production in the United States.

Accompanying me is Mr. H. B. McCoy, who is now Deputy Admin istrator of the Business and Defense Services Administration. Since May 1952 Mr. McCoy has had general responsibility for the work done on newsprint expansion carried on by the Department of Commerce for your committee.

The Forest Products Division of the Business and Defense Services Administration has prepared a statement summarizing the current newsprint situation and outlook.

I will summarize this report and submit the text of the report for your committee's study and incorporation in the record, if so desired.

(The report referred to, entitled "Newsprint, Supply-Demand Situation, 1954" prepared by the Forest Products Division, Business and Defense Services Administration, Department of Commerce, is inserted following Mr. Teetor's testimony.)

Members of the staff of our Forest Products Division are here to answer any specific questions the committee may have on this particular report.

The report on newsprint production from hardwoods, which has been printed by your committee, will be presented by Mr. Jesse J. Friedman, who has had the primary responsibility for directing the project and preparing this report. We also have with us Dr. Paul Graves, associate professor, Forest Management, New York State College of Forestry. Prof. Frederick W. O'Neil, who contributed to the report, and who is head of the department of pulp and paper technology, New York State College of Forestry, intended to appear, but was unable to be here this morning.

Both Mr. Graves and Mr. O'Neil assisted Mr. Friedman in carrying on the hardwoods project. By invitation of your committee, there are also present officials from the Forest Service, Department of Agriculture, who carried on certain technical investigations which are incorporated in the report.

In our judgment, newsprint supply and demand in the United States are currently in balance and it appears that this situation will prevail through 1955. With the increase in world capacity and production, it also appears that world supply will be in reasonable balance with demand in the immediate foreseeable future.

There has been a substantial expansion of capacity to produce newsprint in the United States. Since 1950, accelerated amortization has been granted to facilities to produce 567,000 tons. If all planned and projected plant capacity expansions materialize as now scheduled, they should be in operation (with the possible exception of Alaska) by 1956. By that time United States capacity should total about 1,760,000 tons, which is more than double the capacity existing in 1949.

The general upward trend in the United States newsprint consumption is expected to continue. However, available statistics indicate that apparent United States consumption during the first 5 months of 1954 is about 1.5 percent below a year ago. It is estimated that the total consumption this year, however, will be approximately equivalent to consumption during 1953. In the more detailed statement on this subject, we have included a table showing consumption for 1950 to 1953, and estimated consumption for 1954–55. Of particular interest to your committee is the fact that recently a larger part of our increased domestic needs is being met and will be met in the future from domestic production.

I also call your attention, in the more detailed report, to the statement summarizing reported information on the increase in newsprint productive capacity throughout the world. The statistics quoted would indicate that if all planned projects materialized, world production would be increased 24 percent above that existing in 1953. Canadian trade sources report that Canadian capacity may be increased materially in the next several years.

In summary, our studies, based upon facts and conservative estimates, indicate that newsprint production capacity in the United States and elsewhere in the world is increasing at a steady rate. On the basis of estimates of demand, it would appear that, for the short-term future, supply and demand in the United States should be in reasonable balance.

Mr. Chairman, I am unable to give you a precise answer today to the question in your letter regarding future activities of the Department of Commerce with respect to encouraging the expansion of newsprint production. The Business and Defense Services Administration, where any activity of this type would be carried out, has important responsibilities in the mobilization-readiness program, which has been delegated to the Department by the Office of Defense Mobilization. The BDSA has other important functions relating to services to business and to Government generally. The Forest Products Division has a small staff and, in view of its current responsibilities, I hesitate to make any commitment that would place a heavier workload on the staff of that Division.

However, in view of your committee's interest in this general subject and, based upon our past studies and investigations, I am glad to make two suggestions regarding future studies of newsprint expansion that your committee may wish to consider. In making these suggestions it is understood that I am not committing the Department to carry out such studies.

First, we suggest an inquiry into the technical and economic problems of utilizing waste newspapers in the production of newsprint. As domestic consumption of paper and paperboard increases, the volume of wastepaper and newspaper available for utilization likewise increases proportionately.

In the last 2 or 3 years when United States consumption of paper and paperboard was in the neighborhood of 30 million tons, consumption of wastepaper ranged only around 8 million tons. The wastepaper generated by our annual consumption of paper and paperboard constitutes a "secondary forest" equivalent to at least 25 million acres of average annual pulpwood timber growth on commercial forests.

Any increased use of wastepaper, especially waste newspapers, in making new paper, would relieve the pressure on consumption of pulpwood timber supplies in this country.

If we look ahead for another 25 years, we can anticipate that the United States consumption of paper and paperboard would be near to 60 million tons a year and consequently the amount of wastepaper generated would be about double that of today. Wastepaper consumption in the past number of years has not kept pace with domestic production of paper and board, which has been produced largely from new pulpwood and new woodpulp. New technical problems arise in the use of all types of wastepaper as a consequence of technological changes in the manufacturing of paper, paperboard, books, and so forth. It appears to us that there are great potentials for increasing the volume of wastepaper, particularly waste newspaper, which can be reutilized in the manufacture of newsprint.

As our economy expands each year, our requirements for basic raw materials also increase. In looking to the long-range future, it seems only prudent that serious efforts be made to utilize to the full extent the salvageable waste materials which can add new and important resources for the continued growth of our economy.

The second suggestion we make relates to Alaska. The record indicates that your committee has long had an interest in the utilization of Alaskan timber resources for the production of newsprint. We suggest that an extensive and comprehensive analysis be made of the

factors which are now retarding the utilization of the Alaskan wood resources in the manufacture of newsprint.

Such a study should cover subjects such as fuel and energy, production, labor supply, labor costs, construction costs, plant location, and other economic considerations. Many studies have been made of Alaskan resources by Government and by private organizations. We believe that a specific study of the problems involved in the actual establishment of a newsprint plant would identify specific actions that should be taken either by public agencies or private organizations to achieve newsprint production in that area.

Mr. Chairman, if you or other members of the committee have any questions on the subjects I have just discussed, members of my staff and I will endeavor to answer them.

Mr. LANE. Mr. Secretary, in that second suggestion, in which you say such a study should cover subjects such as fuel and energy, production, labor supply, labor costs, construction costs, and plant location, shouldn't you also take into consideration transportation costs in Alaska?

Secretary TEETOR. I would think so. That would have to be a consideration.

Mr. CELLER. Mr. Chairman?

The CHAIRMAN. Mr. Celler.

Mr. CELLER. Mr. Teetor, there has been a very large plant set up in Alaska recently, has there not?

Secretary TEETOR. I do not know.

Mr. MCCOY. Yes, sir. The Ketchikan project. That is producing dissolving pulp.

Mr. CELLER. What percentage of the newsprint that we use in this country, Mr. Teetor, comes from Canada?

Secretary TEETOR. Mr. Neubrech, will you answer that question, please?

Mr. N. LEROY NEUBRECH (Deputy Assistant Director for Pulp, Paper, and Paperboard, Forest Products Division, Department of Commerce). Approximately 80 percent.

Mr. CELLER. How much?

Mr. FINE. Eighty percent.

Mr. CELLER. How much comes from Scandinavia?

Mr. NEUBRECH. Only 1 or 2 percent.

Mr. CELLER. And the balance is manufactured in this country?

Mr. NEUBRECH. Correct.

Mr. CELLER. Mr. Teetor, what is the present price per ton for newsprint?

Mr. NEUBRECH. $126, New York City price. Other areas vary a dollar or 2 or 3 more than that.

Mr. CELLER. It is a hundred and twenty dollars plus——

Mr. NEUBRECH. A hundred and twenty-six, sir.

Mr. CELLER. Was there any increase in the last year?

Mr. NEUBRECH. No.

Mr. CELLER. When was the last change?

Mr. NEUBRECH. Nearly 2 years ago, I believe.

Mr. CELLER. And what was it then?

Mr. NEUBRECH. It advanced from about 1951 a couple of times, to about—I am just remembering these as guesses——

Mr. CELLER. It went up $6 and it went up $10; is that correct?

Mr. NEUBRECH. I believe so; yes, sir.

Mr. CELLER. So that in the last few years would you say that the increase has been $16 a ton, or was it more?

Mr. NEUBRECH. Approximately that. I do not have the price figures with me, sir, but you are approximately correct.

Mr. CELLER. Mr. Friedman is here. Maybe he could tell us.

Mr. JESSE J. FRIEDMAN (consultant to Department of Commerce). What is that?

Mr. CELLER. Do you know what the increases have been per ton in newsprint the past few years?

Mr. FRIEDMAN. I believe the figures you quoted are correct, Mr. Celler.

Mr. CELLER. When was the increase prior to the increases of $6 followed by $10? Wasn't there another $10 increase, from $90 up?

Mr. FRIEDMAN. The price of paper products generally has increased over a period of years. With respect to newsprint, there undoubtedly were price increases preceding the last two that you mentioned.

Mr. CELLER. Can you succinctly tell us what has been the increase in the last 5 years?

Mr. FRIEDMAN. I don't happen to have that information here, Mr. Celler.

Mr. CELLER. All right.

Mr. NEUBRECH. I have it here on an index basis, if you would like it—Bureau of Labor Statistics.

Starting with 1948, on an index basis, it was 101.9; 105.5 in 1949; 106.2 in 1950; 115.4 in 1951; 125.7 in 1952; and 131.1 in 1953.

That is based on an index of 1947–49 equals 100.

Mr. CELLER. So, since 1948 there has been an increase every year?

Mr. NEUBRECH. That's correct.

Mr. CELLER. Mr. Teetor, have the American companies fallen in line with price increases of the Canadian companies?

Mr. NEUBRECH. Yes.

Secretary TEETOR. Mr. Neubrech?

Mr. NEUBRECH. Yes. The domestic price for most mills.

There is at the present time, I believe, a variation of $2 or $3 per ton of different mill quotations. In years gone by, I believe the quotation was identical for most mills; at least, it is very close.

Mr. CELLER. There was, then, a general parallelism between the American companies' price and the Canadian companies' price. Would you say that condition existed despite the difference in cost of production between the American plants and the Canadian plants?

Secretary TEETOR. Mr. Neubrech?

Mr. NEUBRECH. I wonder, sir, if you could repeat that. I didn't understand the full import of your question.

Mr. CELLER. I say that that parallel in prices existed between the Canadian and the American companies despite the fact that there are differences in the cost of American production as distinguished from Canadian production.

Mr. NEUBRECH. Yes, sir; there is a difference in cost, we believe, although we do not have the exact cost figures.

Mr. CELLER. Could you tell me, Mr. Teetor, or your assistants, whether the zone-pricing system still prevails?

When we had our hearings on newsprint there was testimony to the effect that in the selling of newsprint the companies set up zones of price, and I ask now whether those zoning prices still exist.

Secretary TEETOR. Mr. Neubrech?

Mr. NEUBRECH. Yes, sir; they do, in general. There are some exceptions.

Mr. CELLER. Have there been any studies made by your Department, Mr. Teetor, to determine how the zone-pricing system affects newspaper publishers, especially the publishers of small country newspapers?

Secretary TEETOR. I believe not, Mr. Celler.

Mr. CELLER. You have made no study?

Secretary TEETOR. I believe not.

Mr. CELLER. There have been a number of mergers of paper and newsprint companies, have there not, recently?

Mr. MCCOY. Of newsprint companies or newspapers and paper companies, or both?

Mr. CELLER. Of paper companies in general.

Mr. MCCOY. Mr. Neubrech.

Mr. FORRESTER. Mr. Chairman, may I ask a question?

Mr. CELLER. What is the answer to that?

Mr. NEUBRECH. Are you talking about newsprint or different kinds of paper, paperboard or——

Mr. CELLER. First, give me the answer with respect to newsprint.

Mr. MCCOY. I don't recall, Mr. Celler, on newsprint.

Mr. CELLER. Have there been any combinations or mergers of other companies?

Mr. MCCOY. Yes, sir; there have been some.

Mr. CELLER. Do you think those mergers have had anything to do with the price of paper and newsprint?

Mr. MCCOY. I don't think we could answer that question, sir.

The CHAIRMAN. Mr. Forrester.

Mr. FORRESTER. Mr. Chairman, I want to ask the witness—and I am asking something I do not know: What type of hardwood is used in the production of newsprint?

Mr. MCCOY. The type of hardwood used in newsprint?

Mr. FORRESTER. Yes.

Mr. MCCOY. I believe Mr. Friedman could answer that.

Mr. FRIEDMAN. Congressman, a little later in the proceedings we are going to present a fairly complete story on the use of hardwoods for newsprint.

Mr. FORRESTER. I just wondered, though: Could you tell me rather quickly what type of hardwood? In other words, is it common hardwood, common generally in the United States?

Mr. FRIEDMAN. To the extent that hardwoods are used at the present time for newsprint, the poplar species are used most widely.

Mr. FORRESTER. Did you say poplar?

Mr. FRIEDMAN. Poplar.

Mr. FORRESTER. P-o-p-l-a-r?

Mr. FRIEDMAN. Yes.

Mr. FORRESTER. Poplar tree?

Mr. FRIEDMAN. The various botanical species of the poplar tree.

Under some new processes which have been developed, birch, beech, maple, and possibly the gums are also suitable for newsprint use in fairly substantial proportions. A number of other hardwoods are useful for newsprint in small proportions of the furnish.

Mr. FORRESTER. Thank you, sir.

Now, the reason why I asked that question: I was impressed with what I think are some statistics or figures that the witness gave.

I believe you said about 80 percent of this material comes from Canada; is that correct?

Secretary TEETOR. Newsprint.

Mr. FORRESTER. And then a certain percent comes from Scandinavia?

Secretary TEETOR. A very small percent.

Mr. FORRESTER. And I believe you indicated that domestic production amounted to only about 18 percent of the newsprint consumed in the United States.

Of course, that is a very small percentage, and I would like to ask the gentleman whether he has given consideration to this fact, when he says we are pretty well supplied, that if we were to get into war—and I believe Admiral Byrd points out specifically that if we were to get into a war with Russia that Alaska would probably be the very first place they would attack—I just wonder now what kind of situation we would be in if we were to depend upon Alaska, Scandinavia, and Canada for approximately 82 percent of our newsprint production.

Secretary TEETOR. We could probably depend on Canada for a good deal of our newsprint paper in case of war.

Mr. FORRESTER. I think the gentleman is correct. I think the answer is, as you said, we probably could.

Now, doesn't that address a pretty serious problem to us?

We don't want to operate on the idea that maybe we could. We want to try to operate on the idea that we know we can.

Secretary TEETOR. The probability of having that available would be very great, I should say.

Mr. FORRESTER. I beg your pardon?

Secretary TEETOR. The probability of having the Canadian production available would be very great, I think.

Mr. FORRESTER. Doesn't the gentleman think, though, we should address ourselves seriously to trying to do what we can to get the newsprint in this country instead of being dependent upon the other countries?

Mr. WILLIS. Will the gentleman yield?

Mr. FORRESTER. Yes, sir.

Mr. WILLIS. That is the idea of the studies that have been made the last 4 or 5 years.

Mr. FORRESTER. That is why I delved into that, because of his testimony in which he indicated we have a pretty good supply in this country if we used it.

Mr. WILLIS. Yes.

Mr. FORRESTER. That is why I delved into that.

The CHAIRMAN. We have 6 other witnesses and we have 60 minutes to listen to them. That leaves about 10 minutes to a witness.

Mr. WILLIS. May I ask two questions?

The CHAIRMAN. Yes.

Mr. WILLIS. Mr. Teetor, in one of the papers submitted by the Department of Commerce this morning and distributed to the committee, entitled "Brief Summary of Newsprint Situation," reference is made to a plant located in Lockport, La., owned by the Valentine Pulp & Paper Co., to make newsprint from bagasse, which is a byproduct of the waste of sugarcane. I represent that district, and I am very happy to say I have seen the plant myself. It is completed, and they have started to operate, and that plant will supply newsprint to many small newspapers in that area.

I am very happy that all of us have had something to do with that plant.

Now, my question is this——

Mr. MCCULLOCH. Mr. Chairman, will the gentleman yield to a question?

Mr. WILLIS. Yes.

Mr. MCCULLOCH. Do you know the cost of newsprint production from that source as compared with the cost from softwoods; that is, by companies that have been in the field?

Mr. WILLIS. I will answer it this way: That plant was built by private enterprise without any Government financing, and they thought it was sufficiently competitive to invest about $5 million in it. The reports given to us previously by the Department of Commerce indicated that newsprint production from bagasse probably would be competitive, but it is a young industry and time will have to tell about how well this first plant can fare against their established competition in the industry.

The question I want to ask is this: About a year and a half ago we received from your Department a very splendid report on the utilization of bagasse or sugarcane waste for the manufacture of newsprint, and we, in fact, thought so very highly of that report that this committee, as I recall, suggested that the studies by your Department be broadened to investigate other possible commercial uses of bagasse.

I am wondering if anyone present can tell me whether any progress has been made with respect to that suggestion by this committee.

Secretary TEETOR. I don't know, Mr. Willis.

Can you answer that question, Mr. McCoy?

Mr. MCCOY. I am not sure I understand, Mr. Willis. To investigate other uses of bagasse?

Mr. WILLIS. Yes.

Mr. MCCOY. No, sir; we have not.

Mr. WILLIS. May I assume that hasn't been simply laid aside, and that it is still under consideration?

Mr. MCCOY. We have had the problem of not only finishing the bagasse report on newsprint, but to get this particular report on hardwoods completed, with the limited staff we have. And we have given no thought or planning to wider studies on the use of bagasse for other purposes.

In fact, I am not quite sure we understood the committee wanted studies on bagasse, itself, for other purposes than newsprint.

Mr. WILLIS. Yes, for other types of paper, for dissolving pulp, for wallboard, for chemicals, and many other uses. I know the Department of Agriculture has been in contact with other departments in connection with such possible utilization of bagasse.

Mr. McCoy. That is true, but we have not planned any study at the moment in that field.

Mr. Willis. Just one more question.

Does this report, "Newsprint Production From Hardwoods," which is the second part of the study of newsprint expansion, deal at all with the granting of accelerated amortization or depreciation to this new industry?

Mr. McCoy. Not specifically; no, sir.

Mr. Willis. It does not go into that field?

Mr. McCoy. No.

Mr. Willis. I recall that it was definitely a part of the committee program, that in order to encourage additional newsprint enterprises in the United States by the utilization of our own raw material, your Department—and you are the Department concerned—would extend the accelerated amortization or short-term depreciation benefit to such plants as an aid or as an inducement to go into this new industry.

You have given that some study, haven't you?

Mr. McCoy. Oh, yes, sir. To the extent that the authority continues for the Office of Defense Mobilization to grant accelerated amortization under the amendment to the revenue code, obviously if newsprint is still considered to be necessary for expansion purposes and a goal is set by the Office of Defense Mobilization, we will continue the tax amortization program for newsprint.

Mr. Willis. Since we are trying to encourage this new industry in the United States, would it not be appropriate to give special consideration to new enterprises seeking shortened amortization under the act of Congress?

Mr. McCoy. Well, to date, Mr. Willis, accelerated amortization has been given to all applicants for accelerated amortization in newsprint.

The Chairman. Mr. Crumpacker has a question.

Mr. Crumpacker. Mr. Teetor, I was interested in your comment about wastepaper constituting a secondary forest. What use is being made of waste newsprint at the present time?

Secretary Teetor. Can you answer that?

Mr. McCoy. I think Mr. Neubrech can answer that.

Mr. Neubrech. There are a large number of grades of wastepaper utilized by the paper and paperboard mills, including a large quantity of newspapers, as well as used containers and other types of paper.

It might be interesting for you to know in the wartime period—for example, in 1944, when we were short on fibrous raw material—of our total use of fiber furnish in making various types of paper and paperboard, we used as much as about 40 percent of old papers; the balance was about 60 percent of woodpulp and other fibers.

In 1953, even though we have a lot more wastepaper available, the proportions have dropped so that we are using about 30 percent wastepaper and 70 percent is virgin woodpulp or other fibers.

Mr. Crumpacker. Are there technical problems which make it difficult to reuse the old newsprint to produce new newsprint?

Mr. Neubrech. Yes, more than there were 10 years ago, because in the manufacture of some types of paper there is being put into it certain forms of latex, certain resins; then there are certain new types of ink and adhesives that are very hard to remove from the wastepaper.

Studies will have to be worked out to encourage the fellow who uses these chemicals to maybe switch to another chemical which can be removed from the wastepaper.

Mr. CRUMPACKER. Is progress being made on deinking this old paper, removing any of these other chemicals?

Mr. MCCOY. Some progress is made, Mr. Crumpacker, but still it is not established on a commercial basis.

There was a plant in northern Indiana, Gary, established after the war to produce newsprint from waste paper, which succeeded for a while, at very high prices, but technically the operation failed. They couldn't make the quality of paper at the price that would compete with other newsprint.

We observed an experiment in the last year or so in deinking of newspapers for remaking new newsprint. One mill ran a test on it. The paper was good, except that it was off color.

They had not succeeded in getting a deinking process to remove the ink out of the wastepapers without destroying or losing a great deal of pulp, but some work is still going on.

Mr. CRUMPACKER. Is the Gary plant still operating?

Mr. MCCOY. No, sir. The Gary plant closed down, discontinued.

Incidentally, the majority stockownership was owned by newspaper publishers.

Mr. CRUMPACKER. Off the record.

(Off the record).

The CHAIRMAN. On the record.

Mr. ROGERS. Mr. Secretary, I was interested in your statement on page 3, the last paragraph that runs over on to page 4, which, in effect, says you are unable to give us an exact answer as to the activities of expansion of newsprint production, and that the Business and Defense Services Administration has a division known as the Forest Production Division, with a small staff, and you hesitate to load that staff down with a further study as to the expansion of newsprint or activities in the United States.

Is that due to the fact that you don't have enough appropriation to carry that out?

Secretary TEETOR. That is the only reason.

Mr. ROGERS. In the studies that have been made heretofore, has the answer come up that, due to the position of the Canadian companies that supply 80 percent of the newsprint, they can regulate the price in such a manner as to make it unprofitable for private enterprise to proceed with a large investment and create a lot of newsprint in this country?

Is that one of the answers that your Department has received, or have you made any study in that regard?

Secretary TEETOR. Well, I don't know that a study has been made in that regard, Mr. Rogers. Perhaps some of my staff might be able to answer that question. I don't know.

I am not quite sure I understand your question. Would you restate it, please?

Mr. ROGERS. Well, the question boils down simply to this: Due to the monopoly that is exercised by the Canadians, where they supply us 80 percent of our newsprint, is it true that private enterprise in this country hesitates to invest capital to expand newsprint produc-

tion in this country because of the fear that the price may be driven down to run the new enterprise out of business?

Secretary TEETOR. Well, I don't know whether that has been a factor, or not. The indexes that were given by Mr. Neubrech in this testimony, seemed to indicate there has been no fluctuations in price, that it has steadily increased over the last several years.

Mr. ROGERS. Oh, yes: it has increased, but the man who may be interested in going into the newsprint business in this country is confronted with the possibility that he will run into competition that will make it unprofitable for him to proceed.

Mr. MCCOY. That would be a matter of judgment, Mr. Rogers, I take it, as to why we have not had larger expansions of newsprint in the United States. There is no reason to believe that companies have preferred to invest in other types of paper production than newsprint, perhaps due to the perhaps more profitable type of other activities than to the lack of adequate wood resources, especially softwoods, but you will note in our statement here there has been an expansion of newsprint capacity in the United States recently.

Mr. ROGERS. Yes.

Mr. MCCOY. One very large plant is going in now.

Mr. ROGERS. The reason I was asking those questions: there was an attempt to establish a newsprint mill in the State of Colorado within the last 3 or 4 years. At that time they were trying to get a loan from the RFC and one of the reasons given as to why the loan should not be made available was the likelihood that the Government might have to foreclose on the plant because of the hazard of Canadian competition.

Now, that is one of the reasons given. I just wondered if any study had been made of that subject by your Department and if any answer was provided to that question?

Mr. MCCOY. No, sir; not to that question. We generally assume, however, that newsprint production is a very competitive enterprise.

The CHAIRMAN. The Chair wishes to call attention to the committee that there are 50 minutes remaining. We have six witnesses yet.

Mr. DONOHUE. I would like to ask one question.

Have you any information as to how much American capital is invested in the Canadian companies producing woodpulp?

Mr. MCCOY. I don't know. I couldn't give you that this morning, Mr. Donohue. I believe the Department of Commerce has made some study of United States capital, private capital investment in other countries. I could look that up for you and ascertain how much private capital is invested in Canadian newsprint companies.

Mr. DONOHUE. Offhand, could you tell us whether or not it is substantial?

Mr. MCCOY. I should think it is. In fact, many large American newspapers have large interests in Canada.

The CHAIRMAN. Mr. McCoy, you are next on the witness list.

Mr. MCCOY. Yes, sir: I am just here accompanying Mr. Teetor. I have no statement to make.

The CHAIRMAN. You have no separate statement?

Mr. MCCOY. No, sir.

The CHAIRMAN. May I suggest that those of you who have statements file them, and then if you will just give us a summary of what your statement is, or anything in addition, it would expedite matters.

Mr. MCCULLOCH. Mr. Chairman, I have one question that I would like to ask before Mr. Friedman testifies, and it is directed to the gentleman who was giving us some statistics in answer to the questions from Mr. Celler.

As I recall, Mr. Neubrech, your statement was that the price of newsprint had increased approximately 30 or 31 percent from 1947 until the present time. Is that correct?

I believe you said, using 1947 as a basis of 101, in 1953 the price was 131.

Mr. NEUBRECH. Well, sir, the percentage would have beer greater than that, if you want to take just the year 1947, because in 1947 the index was 92.6 and it went from there to 131.1 in 1953. So, percentagewise, I believe it was a little higher than that.

Mr. MCCULLOCH. Do you know how much the cost of production increased during that time?

Mr. NEUBRECH. No, sir.

Mr. MCCULLOCH. Do you know how much labor costs increased in that time?

Mr. NEUBRECH. Costs have gone up, but to what exact degree, I do not know.

The CHAIRMAN. Thank you, Mr. Teetor, and your assistants also.

NEWSPRINT SUPPLY-DEMAND SITUATION, 1954—STATEMENT BY FOREST PRODUCTS DIVISION, BUSINESS AND DEFENSE SERVICES ADMINISTRATION, UNITED STATES DEPARTMET OF COMMERCE

BRIEF SUMMARY OF NEWSPRINT SITUATION

The United States outlook for newsprint supply during the remainder of 1954 and through 1955 appears favorable. Similarly, with increased world capacity and production of newsprint, it is expected that world supplies will continue in reasonable balance with demand through 1955.

The newsprint expansion program has resulted since 1950 in the granting certificates for accelerated amortization on facilities for the production of 567,000 tons. The planned capacity expansions, if constructed according to estimated schedules, should be in operation by 1956. By that time United States capacity, if all new projects are completed, should total about 1,760,000 tons or more than double the domestic capacity existing in 1949. The upward trend in United States newsprint consumption is expected to continue in the years ahead.

Details concerning both the world and the United States newsprint situation respecting supply and demand have been presented to your committee periodically for the past several years. Briefly, it will be recalled that as an aftermath of World War II there was a worldwide shortage of newsprint. About 1950 there were indications that a balance might be achieved, but the Korean war again brought about abnormal conditions resulting in an upsurge in consumer buying both for actual use and for building inventories. Even though production in most newsprint producing countries showed an upward trend since 1946, a reasonable balance between supply and demand was not achieved until 1952.

The International Materials Conference (in which the United States and Canada participated) was established in 1951. A subcommittee was set up to carefully analyze shortages of newsprint in other free countries of the world and to make recommendations for voluntary allocations for export from North America to aid a number of countries in substantial distress. By 1952 the general world newsprint supply and demand situation was in approximate balance, and the International Materials Conference subcommittee on newsprint ceased its activities. The relative balance between supply and world demand

continued through 1953 and to date, although there have been reports of occasional or localized shortages.

The supply-demand relationship achieved in 1952 and 1953 was the result of many factors. World production in 1953, totaling 10.9 million tons, had increased more than 1½ million tons over the 1949 level. About half of this gain in output was in Canada and in the United States. In fact, North American production in 1953 was about 700,000 tons greater than in 1949, with the United States accounting for approximately 200,000 tons. Most of this increase in North American production has resulted from speedups and modernization of existing mills. Several other countries also showed increases in production. The most important was Great Britain, where production in 1953 was about 175,000 tons greater than 4 years previous.

Before presenting a detailed analysis of the United States newsprint situation currently and in the near future, it perhaps should be noted from the standpoint of the world picture that a number of new newsprint projects are now in progress and other prospects have been announced which, if completed, would raise the world newsprint capacity by an additional 2¾ million tons, or approximately 24 percent above the 11.6 million tons of world capacity existing in 1953. This observation is based upon the comprehensive statistical report on newsprint data prepared in November 1953 by the Newsprint Association of Canada. New projects are listed for a number of countries in Europe, Latin America, Asia, Oceania, and Africa. Providing the then announced tentative plans are completed, there would be 14 additional countries added to the list of those presently producing newsprint, bringing the total to 47.

As additional production facilities for newsprint come into operation in the other American Republics and in other overseas countries, the pressure of demand for newsprint from North American sources should diminish and thereby indirectly contribute to supplies of newsprint available to United States publishers.

The United States outlook for supply of newsprint during the remainder of 1954 and during 1955 appears favorable. The general upward trend in the United States newsprint consumption will probably be temporarily broken in 1954, partly as a result of many of the larger newspaper publishers reducing column widths, while at the same time there was a slight downward readjustment in general economic activity in the United States in the first half of the year. Over a comparatively long period of years, growth in newsprint consumption tends to follow the population growth, but at the same time is influenced by general economic activity. According to reports of the Council of Economic Advisers, the gross national product in the first half of 1954 was $356.5 billion on an annual basis, a decline of 3 percent below 1953. In similar comparison, the Federal Reserve Board Index of Industrial Production in the first 6 months of 1954 was 124, a decline of 7½ percent under the 1953 average. These economic factors have an important bearing on the aggregate of newsprint consumption.

At the present time, official statistics on newsprint are available for the first 5 months of 1954. The attached table I shows production, imports, exports, and apparent consumption for this period compared with the same period of 1953. It will be noted that apparent United States consumption in the first 5 months of 1954 is 1.5 percent below a year ago. It is estimated that total consumption for 1954 will be approximately equal to 1953.

It is estimated that newsprint consumption in 1955 will be 2 percent greater than in 1954 (see table II), which is close to the long range average annual increase in United States consumption.

Of particular interest to your committee is the fact that a substantially larger part of our increased domestic needs is being met and will be met from domestic production. Our estimates for 1955 disclose an important gain in domestic output and only a very modest increase in imports. Out of the expected increase of 370,000 tons in United States consumption of newsprint between 1950 and 1955, approximately 300,000 tons is expected to come from domestic mills. It would appear that the work of your committee in stressing the importance of newsprint has been very instrumental in encouraging new production facilities in the United States, which, coupled with the accelerated amortization program under the Defense Production Act, has actually resulted in several important new facilities in the United States.

The newsprint capacity of the United States (including Alaska) will have, by 1956, doubled that of 1949. In 1949 United States annual capacity was 876,000 tons. (See table III.) By 1953, United States capacity had grown to 1,170,000 tons. By 1956 it is expected to reach 1,760,000 tons, an increase of 884,000 tons over 1949. This remarkable growth has been aided since 1950 by the accelerated amortization program under which certificates of necessity benefits have been granted to projects calling for 567,000 tons of new newsprint capacity.

In addition, there has been and will undoubtedly continue to be small annual capacity increase through modernization, speed-up, and replacement of old machinery.

The following is a summary of United States newsprint projects either completed, under way, or projected. All these projects have been granted certificates for accelerated depreciation.

The official Defense Production Administration (now ODM) newsprint expansion goal was approved in 1951 for an increase in United States newsprint capacity totaling 494,000 tons. Tax amortization certificates have been granted in the aggregate for 586,000 tons. However, two small proposed projects have been abandoned, leaving 567,000 tons of new capacity in the program. The actual goal of 494,000 tons was exceeded by the granting of the last issued certificate, more than half of which went toward meeting the goal. The excess over the established goal is the result of granting this one large project a tax amortization certificate which is in accordance with ODM policy under these circumstances.

Since 1951, there were 10 certificates for newsprint expansion granted. However, two companies, the Michigan Paper Co., Plainwell, Mich., and the Superior Newsprint Co., Gary, Ind., decided not to go through with their projects.

Three companies (Great Northern Paper Co., Millinocket, Maine; Publishers Paper Co., Oregon City, Oreg.; and West Tacoma Newsprint Co., West Tacoma, Wash.) accounting for 47,000 tons, completed their expansion of existing mills in 1953.

Two other companies, both new mills, will be in full production in 1954 and will, by the end of this year, add 142,000 tons of new newsprint capacity to the United States. One of these new mills, Bowater Southern Corp., Calhoun, Tenn., has started in breaking-in operations and expects it to be in full commercial operation by fall. The other company, Valentine Pulp & Paper Co., Lockport, La., during June and early July underwent a breaking-in period and expects to be in full commercial operation by August. Valentine mill officials have informed us that they have orders for newsprint from several local newspapers. They also intend to produce other grades of paper, such as printing and writing papers.

The second expansion project of the Great Northern Paper Co., Millinocket, Maine, part of which involves the new chemigroundwood pulping process utilizing hardwoods, is expected to be in operation during 1955. There is some likelihood part of the expansion will be in production late this year, but not in sufficient time to add appreciably to 1954 capacity.

The Southland Paper Co., Lufkin, Tex., had not let contracts as of mid-July for the new machinery involved in their expansion project. However, they have started construction on the necessary buildings, but it will be early 1956 before their additional productive capacity will be operating.

The Georgia Pacific Plywood Corp., the last company to receive a tax-amortization certificate, plans to construct a large newsprint mill at Juneau, Alaska. Their certificate calls for construction to begin before January 1, 1955, and they hope to complete their plans including bids for Forest Service timber, and start construction by that time. Assuming this Alaskan newsprint project materializes, it will be at least 1956 before construction could be completed.

In summary, of the projects receiving tax amortization, three were for new mills. Two of these were in the South, one of which will use bagasse as a raw material, and the other will use pine. In the southern region, present newsprint productive capacity is substantially below consumption. The other new mill is planned for Alaska and will be the second important project to make use of Alaskan timber, the first being the Ketchikan Pulp & Paper Co., producing dissolving woodpulp. The Ketchikan mill started production this past spring.

Of the others, which involve expansion of existing facilities, two were in the West where population increases have been above the average in the United States. One is in the South and will further add to that region's newsprint capacity. The other project, located in Maine, will add materially to the capacity

needed to meet the demands of the northeastern United States, the largest regional consumer of newsprint.

Notwithstanding a growing newsprint capacity in the United States, domestic publishers will have to continue to rely upon Canada for a large part of their needs.

In the November 1953 report of the Newsprint Association of Canada, it is indicated that Canadian capacity will continue to increase materially in the next several years. It is impossible to project the eventual distribution of Canadian production as years go by. It is known, nevertheless, that Canadian consumption is steadily rising and will take considerable tonnage of the Canadian output. Also, at the moment there are reports that the United Kingdom may completely dispense with controls on consumption, and would, over a period of years, be expected to draw more heavily upon Canadian supplies. Only recently the United Kingdom authorized an additional 50,000 tons of newsprint imports from dollar sources and another 50,000 tons from sterling sources. This action portrays the expected release of controls in England. Other foreign countries will likewise continue important buyers of Canadian newsprint. Nevertheless, because of contractual relationships between United States publishers and many Canadian mills, and for other reasons, such as transportation advantages and long-term steadiness and growth in United States markets, it may reasonably be expected that United States publishers could rely upon a share of increased production from Canadian mills as time goes on.

From the standpoint of United States consumers of newsprint, there are a number of factors which favors a greater share of newsprint supplies from domestic production. As both production and transportation costs rise, the distances between producers and consumers become a much greater economic consideration. As pointed out in the report being presented to your committee today, there remains a very large margin of consumption in the Southern States exceeding the production of the present newsprint mills in the South. This report outlines some potentials that exist in the United States, both in the North and in the South, for the utilization of hardwoods in newsprint production on an economic basis. On the west coast there remain potentials for additional newsprint production in continental United States, but more particularly in Alaska.

TABLE I.—*United States newsprint production, imports, exports, change in inventory and apparent consumption, first 5 months 1954 compared with first 5 months 1953*

[Thousands of tons]

Item	First 5 months 1954	First 5 months 1953	Percent change 1954 versus 1953
Production	465	436	+6.7
Plus imports	2,014	2,034	−1.0
Total new supply	2,479	2,470	+.4
Minus exports	38	19	+100.0
Net new supply	2,441	2,451	−.4
Inventory change [1]	−33	−60	
Apparent consumption	2,474	2,511	−1.5

[1] United States mills and publishers.

Source: Prepared by the Forest Products Division, Business and Defense Services Administration, Department of Commerce, from production, import and export data from the Bureau of the Census; and inventory data from the Newsprint Service Bureau and the American Newspaper Publishers Association.

TABLE II.—*Annual United States newsprint production, imports, exports, change in inventory and apparent consumption, 1950–53 and estimated 1954–55*

[Thousands of tons]

Item	1950	1951	1952	1953	Estimated 1954	Estimated 1955
Production	1,013	1,108	1,109	1,065	1,170	1,300
Plus imports	4,863	4,963	5,036	5,004	5,010	5,025
Total new supply	5,876	6,071	6,145	6,069	6,180	6,325
Minus exports	44	71	105	47	80	100
Net new supply	5,832	6,000	6,040	6,022	6,100	6,225
Inventory change [1]	−24	+97	+94	−64	.....	.....
Apparent United States consumption	5,856	5,903	5,946	6,086	6,100	6,225

[1] United States mills and publishers.

Source: Prepared by the Forest Products Division, Business and Defense Services Administration, Department of Commerce, based on production, import and export data from the Bureau of the Census and inventory data from the Newsprint Service Bureau and the American Newspaper Publishers Association.

TABLE III.—*United States newsprint capacity, 1949–53, and estimated 1954–56*

Annual capacity	*Thousands of tons*
1949	876
1950	992
1951	1,050
1952	1,165
1953	1,170
Increase in 1954 [1]	160
1954 annual capacity	1,330
Increase in 1955 [1]	180
1955 annual capacity	1,510
Increase in 1956 [1]	250
1956 annual capacity	1,760

[1] Includes small annual capacity increases through mill modernization, speedup, etc., in addition to new capacity resulting from tax-amortization certificates.

Source: Prepared by Forest Products Division, BDSA, Department of Commerce. 1949–53: American Newspaper Publishers Association. 1954–56: Estimated by Forest Products Division.

The CHAIRMAN. We will now be pleased to hear from Mr. Friedman.

STATEMENT OF JESSE J. FRIEDMAN, CONSULTANT TO THE DEPARTMENT OF COMMERCE, ACCOMPANIED BY DR. PAUL F. GRAVES, NEW YORK STATE COLLEGE OF FORESTRY, AND RICHARD HELLMAN, ASSISTANT TO JESSE J. FRIEDMAN, DEPARTMENT OF COMMERCE

Mr. FRIEDMAN. Mr. Chairman, I would like to introduce to the committee two of the men who have worked closely with me in preparing this study: Mr. Richard Hellman, who has served as my principal assistant, and Dr. Paul Graves, of the New York State College of Forestry, who has served on my staff as consultant on forestry problems. Professor O'Neil, also of the New York State College of Forestry, served as consultant on technical matters with respect to pulping, but he is unable to be here today.

The study, entitled "Newsprint Production from Hardwoods," which we are presenting to the committee today, represents a very intensive investigation into the economic and technological factors determining the use of hardwoods for newsprint.

In addition to a considerable research and field work, there has been close collaboration with major companies who are either already using hardwoods for newsprint or are actively engaged in developmental work along this line.

Such commercial experience relates to companies operating in the United States, in Canada, and in other countries. I have also had the benefit of very active consultation with top executives and technicians of the pulp and paper industry here and abroad throughout the development of this report.

I have prepared for the convenience of the committee a summary of the major study which you have before you. The summary is perhaps 1 percent of the size of the report, and I hope will simplify your use of the report.

The CHAIRMAN. Very well, your summary will be inserted in the record at this point.

SUMMARY OF REPORT ON NEWSPRINT PRODUCTION FROM HARDWOODS—PRESENTED BY JESSE J. FRIEDMAN, CONSULTANT, DEPARTMENT OF COMMERCE

BACKGROUND

1. Newsprint use

In the face of limited availability of the raw materials normally used for newsprint manufacture, the demand for newsprint in the United States, which has increased steadily for more than a decade, continues to rise. Approximately 6.1 million tons of newsprint, equivalent to 78 pounds per capita, were consumed in the United States in 1953, chiefly for newspaper use. A recent estimate of the American Newspaper Publishers Association places newsprint demand in 1960 at about 7.5 million tons, while the President's Materials Policy Commission has estimated that by 1975 requirements for newsprint will approximate 8.7 million tons.

For more than a quarter of a century, the bulk of the newsprint used in the United States has been supplied by Canada. The heavy concentration of newsprint production in Canada has been based upon conditions of competitive economics.

2. Hardwood potentialities

Hardwoods hold out the possibility of major additions to the supply of newsprint pulping materials within the United States. As reported by the Forest Service in latest available data, annual growth of hardwood timber for the country as a whole was estimated to be about equal to that of softwoods. Hardwood growth was estimated to exceed hardwood drain by about 20 percent, whereas it was estimated that the softwoods were being overcut by a similar margin.

Hardwoods are being used increasingly for various grades of paper other than newsprint, but their utilization for the manufacture of newsprint in the United States has heretofore been of minor consequence. Recent technological developments, however, have shown the way to efficient and economic pulping of certain abundant hardwood species—primarily poplar, birch, beech, and maple—for use in making newsprint.

Industrial interest has already been demonstrated in the United States and elsewhere in growing and using hardwoods for newsprint, and important commercial beginnings have been made. Substantial supplies of suitable native hardwoods are economically available in the United States, and these supplies could be expanded if necessary to meet increased demands.

3. Increased hardwood use

Great strides have been made in recent years in the development of pulping technologies particularly suited to the processing of hardwood species on an efficient and economic basis. In 1953 about 4.4 million cords of hardwoods were used for the manufacture of pulp and paper in the United States, or about 15 percent of the total pulpwood consumed by the industry. This is more than twice the amount of hardwood pulpwood used a dozen years ago.

4. Pulping processes

Certain technologies suitable for pulping hardwoods for newsprint use on a substantial scale have been developed and are in various stages of commercial realization. The most promising of these technologies are the chemigroundwood, neutral sulfite semichemical, and cold soda processes in addition to the conventional groundwood process.

Of the hardwood species, only poplar is suitable for groundwood pulping from the standpoint of general availability and of brightness, strength, and other qualities required for newsprint use. Ontario Paper Co., a major Canadian newsprint producer, uses poplar as a source of about one-fifth of the groundwood pulp furnish in its newsprint production during 8 months of the year at its Thorold, Ontario, mill. Cartiere Burgo, the leading Italian producer of newsprint, uses plantation-grown poplar to provide the full groundwood content of its regular furnish.

Chemigroundwood, semichemical, and cold soda pulps made from poplar and certain other hardwoods have intermediate strength properties between softwood groundwood and chemical pulps, and also have other favorable properties which in blends of various proportions with poplar groundwood permit substantial displacement of the softwood chemical pulp as well as of the softwood groundwood normally used.

5. Chemigroundwood process

The chemigroundwood process, which is commercially the furthest advanced of the newer hardwood pulping technologies for manufacturing newsprint, is suitable for pulping poplar, birch, beech, and maple (and possibly the gums) for newsprint use without bleaching.

This process, developed at the New York State College of Forestry, Syracuse, N. Y., has been adopted commercially by the Great Northern Paper Co., the ranking newsprint producer in the United States.

6. Semichemical process

The semichemical process, first developed by the Forest Products Laboratory, is suitable for pulping poplar, and possibly birch, for newsprint use without bleaching. Other hardwood species are bleachable at an additional cost. The process is being used increasingly for the production of printing papers other than newsprint. At the Richmond Pulp & Paper Co. mill at Bromptonville, Quebec, an average of 10 percent of the regular newsprint furnish consists of semichemical pulp.

7. Cold soda process

The cold soda process, which was also pioneered at the Forest Products Laboratory, has important potentialities for economic pulping of poplar and possibly other hardwoods for use in newsprint. While the process has not fully emerged from the developmental stage in this country, Cartiere Burgo in Italy, following completion of a successful pilot operation, is installing a small cold soda pulp mill to produce pulp for use in its regular newsprint production.

8. Newsprint trial runs

A series of pulping and paper-machine trials was conducted at the Forest Products Laboratory, Madison, Wis., in February 1954. Cottonwood, a poplar species, was used as the basic hardwood raw material for these trials. Newsprint papers were made on the 13-inch paper machine of the laboratory at a speed of 75 feet per minute from furnishes containing cottonwood (and in some cases willow) groundwood blended with chemigroundwood, semichemical, or cold soda pulps made from cottonwood, together with semibleached kraft pulp in most cases.

The results indicate: (1) That satisfactory newsprint can be produced from a furnish of cottonwood groundwood and semibleached softwood kraft pulp in

which the proportion of the groundwood is at least as high as that of softwood groundwood used in conventional commercial newsprint; and (2) that chemigroundwood, semichemical, or cold soda pulps made from cottonwood can be used in combination with cottonwod groundwood to displace all of the softwood groundwood and some or all of the softwood chemical pulp normally used in a newsprint furnish.

The feasibility of manufacturing newsprint at commercial speeds made from substantial proportions of hardwood pulps as indicated should be conclusively determined by commercial trials on suitable equipment.

9. Cost considerations

Aside from the broadened raw material base made possible by the use of hardwoods for the manufacture of newsprint, such use offers the prospect of important cost advantages.

10. Further research needed

More technical information is needed to establish the optimum proportions of hardwood pulps made by the various processes to obtain the best newsprint qualities at the lowest costs, and to determine the suitability of such pulping processes for a number of commercially available hardwood species about which relatively little is known.

HARDWOOD RESOURCES FOR NEWSPRINT

11. Location of hardwood resources

Most of the native hardwood timber stands in the United States are concentrated in the eastern part of the country. Of approximately 6.6 billion cubic feet of annual hardwood growth about 2.9 billion cubic feet is in the South, another 2.2 billion cubic feet is in the New England, Middle Atlantic, and lake regions, and the balance in the Central and Plains States. Two important regions have been selected for special analysis in this report: (*a*) the hardwood bottomlands and other alluvial areas of the lower Mississippi Valley, and (*b*) the Northeast-Lake States region, covering New York, New England, Michigan, Minnesota, and Wisconsin.

LOWER MISSISSIPPI VALLEY

12. Hardwoods in the South

The hardwoods in the timber stands of the South constitute a large potential supply of raw materials for pulp and paper manufacture. Of these hardwoods the cottonwood species offers a number of technological and economic advantages with respect to pulping for newsprint use.

The cottonwood tree, a poplar species, is considered the fastest growing commercial forest tree native to North America. It achieves a natural growth rate far in excess of that of pine, spruce, or other softwoods conventionally used in the manufacture of newsprint.

13. Lands suitable for cottonwood

Approximately 2.4 million acres of overflow and other alluvial lands in the region of the lower Mississippi Valley are estimated to provide favorable growing conditions and promising economic advantages for cultivation of cottonwood in commercial plantations. These lands are underutilized at present, particularly the unprotected or batture lands, where the danger of annual flooding makes agricultural cultivation impractical. Establishment of cottonwood plantations on these lands would greatly enhance their economic value to the owners and to the communities concerned.

14. Growth potential

Such plantations give good promise of providing a substantially larger volume of useful wood at substantially lower unit costs than can be obtained in any other area of comparable size in the United States. There is evidence to indicate that on the acreage which provides favorable growing conditions for cottonwood, average annual wood yields of 400 cubic feet per acre over a 15-year growing cycle, and 500 cubic feet over a 25-year rotation, are attainable.

15. Economic feasibility

The economic feasibility of commercial cottonwood plantations stems from (*a*) the marginal utilization of the batture lands, which are unsuitable for annual crops due to the danger of flooding, and (*b*) the rapid growth rate of

cottonwood which produces an annual volume of wood far in excess of that produced in pine and spruce plantations. In addition to substantial quantities of pulpwood, cottonwood timber stands will yield very high values in veneer and sawlogs when grown to mature dimensions.

16. Mill location

The Memphis area and other locations on the Mississippi River are favorably situated with respect to cottonwood lands, provide economic access to major markets via barge transportation for a distance of several thousand miles on the most interconnected inland-waterway system in the country, and are suitable in other respects for the establishment of initial newsprint mills based primarily upon cottonwood.

17. Pulp potential

If the full cottonwood growth potential on the estimated 2.4 million acres of suitable lands in the lower Mississippi Valley were realized, it could eventually provide raw material for at least 6.5 million tons of newsprint or other pulp production annually, assuming the use of only 30 percent of the annual timber growth for pulpwood. Realization of even a fraction of this potential in the form of newsprint expansion would significantly improve the domestic newsprint supply position of the United States, particularly in the South, where newsprint consumption is growing more rapidly than in any other region of the country.

18. Research and field trials

Continuation of research should be encouraged, particularly with reference to determining the most profitable plantation management techniques under commercial conditions. Field trials are desirable to determine conclusively yields to be expected in commercial operation.

NORTHEAST LAKE STATES REGION

19. Newsprint and timber in the region

More than two-thirds of the total United States demand for newsprint is in the Northeast and Lake States, which up to 25 years ago was also the center of newsprint production in the United States. Aside from Maine, manufacture of newsprint is no longer an important factor in the region, as growing scarcity of softwood timber and inability of producers to supply pulpwood needs at competitive costs have led to production to shifts to higher grades of paper and migration of newsprint production to Canada.

Nearby sources of spruce, fir, and other softwood timber are seriously inadequate to meet the requirements of the pulp and paper industry in the region. Wood costs are high in comparison with other sections of the country, and steadily increasing. Significant expansion of newsprint or other pulp production in the Northeast Lake States region is feasible only if based primarily upon use of hardwoods.

20. Hardwood stands

Natural hardwood stands in the region, which are predominantly in farms and other small ownerships, now produce a substantial surplus of annual growth over drain in birch, beech, maple, and poplar species, which are suitable for newsprint use.

The volume of growth in these native hardwood stands could be significantly increased within a reasonable period if sufficient economic incentive existed for the management attention and effort required. Lack of such incentive in the past is primarily responsible for the generally understocked condition of these stands at the present time, which in turn has held annual growth far below production capabilities.

Availability of a broader market for hardwood pulpwood than at present, whether for the manufacture of newsprint or other uses, would help to provide the necessary incentive for improved hardwood management by making it economically more feasible to remove less desirable trees now hampering growth of the stands.

21. Pulp potential for surplus growth

The volume of hardwood timber resulting from present excess of growth over drain, plus increased volume of growth potentially available from application of general forest-management principles could, if fully utilized, provide

an annual supply of birch, beech, maple, and poplar sufficient to produce about 8 million tons of newsprint or other pulps. The translation of a modest part of this potential into actual expansion of newsprint production would have a significant effect upon the newsprint supply-demand position of the region and of the United States generally.

22. Poplar plantation possibilities

Poplar plantations may be considered as a further potential source of hardwood suitable for newsprint use.

23. Lands available for poplar plantation

Millions of acres of agricultural land in the Northeast-Lake States region, once under cultivation, are now unused or abandoned. About 2.5 million acres of land under scattered ownership, comprised largely of areas only recently withdrawn from agriculture, would be available and suitable for poplar cultivation. About one-half of the acreage is in New York State where the unused agricultural land situation is most serious, but which at the same time offers the most promising opportunities for commercial forest plantation management.

24. Pulp potential from poplar plantations

An average annual yield of approximately 375 cubic feet per acre on a 25-year rotation would be potentially attainable on these lands. The potential supply of raw material from this source could ultimately support production of about 2.5 million tons of newsprint or other pulps annually.

25. Future commercial development

The commercial potentialities of poplar plantations as an economic source of timber have already been recognized by a number of large paper companies in the area. To broaden commercial interest, field trials are needed to confirm growth expectations and to determine the most efficient and profitable plantation methods to employ under commercial conditions.

Commercial fulfillment of the hardwood resource potentialities of the region will be materially influenced by the speed and vigor with which the practical business problems which exist are overcome.

Experience and ingenuity of the industry should provide the means of resolving these problems without serious delay.

The CHAIRMAN. You may proceed, Mr. Friedman.

Mr. FRIEDMAN. The evidence indicates, that it is technically and economically feasible to use hardwoods to a substantial extent in newsprint manufacture. The United States has tremendous hardwood resources, both present and potential, to draw upon.

None of the individual factors analyzed in this report are strange to American industry. I refer to such factors as the availability of existing hardwoods; the wood-growing potentials in timber plantations; integrated logging and integrated utilization of the wood, including waste wood; the development of new technologies, specifically designed to pulp hardwoods, and the possibilities of cost savings in the use of hardwoods as a source of raw material.

The use of hardwoods for paper other than newsprint is an established commercial reality on a substantial scale, and is expanding steadily. Major commercial beginnings have been made in using hardwoods for newsprint also.

With the development of new technologies, the way has been opened for hardwood use for newsprint under economic conditions on a large scale. In my opinion, we are on the verge of a tremendous further movement to the use of hardwoods in this country, for paper generally, and for newsprint specifically. We hope that the report and the investigation behind it being presented to you today will help to accelerate the progress in this direction.

Mr. Chairman, may I suggest that if at any time any of the members of the committee wish to interrupt, I will be very glad to answer any questions.

Mr. ROGERS. I take it you have told us something of the major conclusions from your study; that we can take the summary you have prepared and become informed as to that; and that you are now ready to answer any questions we care to ask.

Mr. FRIEDMAN. I believe that may expedite the procedure.

Mr. ROGERS. It will probably expedite the matter.

Mr. MCCULLOCH. You may proceed with the questioning.

Mr. ROGERS. The first one I would like to ask you is this: You speak of the new technology in the transformation, I presume, of hardwood into newsprint. Is that of a recent origin, the new technology that you are talking about?

Mr. FRIEDMAN. Those technologies, Congressman, are in various stages of "newness."

Let me start with the one which is already being commercially developed in the United States. That is the chemigroundwood process, which involves a chemical pretreatment of logs of wood before grinding them. That process has been adopted commercially by the Great Northern Paper Co. The largest newsprint producer in the United States. That company, located in Maine, is investing several million dollars, after very careful investigation on a large pilot scale.

Mr. ROGERS. May I interrupt you there?

Is that same method being adopted in the Canadian plants?

Mr. FRIEDMAN. Not as yet, Congressman. This process was developed at the New York State College of Forestry in 1950. Thus far the only company to adopt it has been Great Northern.

There are other processes which are being used commercially in Canada and in other countries, but chemigroundwood is the only one of the newer processes to reach this state of commercial development in the United States.

Mr. FINE. I notice that in paragraph 23 of your summary, you refer to New York State. Can you tell us what the situation is in New York for the growth of poplars?

Mr. FRIEDMAN. Congressman, this refers to a study which we have made of the possibilities of using lands in this country that are now unutilized or underutilized, and putting them to good economic use in growing the kind of hardwood timber which we know will make newsprint and other pulp products. In that way a double purpose would be served—doing something that is good for the resources of the Nation and of the locality concerned, and promoting a greater supply of raw material for newsprint manufacture.

Two areas were selected to study the potentialities of those unused lands. One is the great acreage that exists in the river bottomland of the South, particularly in the unprotected lands which are subject to annual flooding and are therefore unsuitable for agricultural cultivation. The other area represents land in the northern part of the country, particularly in New York State where the problem is most serious. Our investigation relates to the feasibility of growing poplar—the fastest growing tree on this continent—somewhat like a crop on a plantation basis.

There are millions of acres of such unused agricultural lands in New York State and elsewhere in the Northeast-Lake States region.

It is estimated that a total of about 2½ million acres in this region would be favorable for growing poplar under an intensive management system and that roughly half of that acreage, about 1.3 million acres, is in New York State alone.

Because of his detailed familiarity with it, I would like to ask Dr. Graves to comment on the New York situation, in which I know you are especially interested.

Dr. GRAVES. With respect to the unused lands, of which about 4 million acres in New York State alone are still open, if not reverted to natural forest growth——

Mr. CELLER. In what counties are they?

Dr. GRAVES. They are predominantly the central and southern tier counties of New York State.

Mr. CELLER. They are not in the Adirondacks area?

Dr. GRAVES. No. The bulk of those open lands would still have their probably highest use in trees other than poplar. They have been found to be unsuitable for agricultural use, and perhaps their highest use is for reforestation and, because of the nature of those areas, the soil and exposure and other conditions of site, coniferous plantations would probably be more feasible; but there are about 1.3 million acres of those lands in New York that are estimated to lend themselves very favorably to the fast growing poplar tree, particularly to various of the hybrid poplars.

Mr. CELLER. Are those lands publicly or privately owned?

Dr. GRAVES. At the present time some of them are publicly owned through tax delinquency, some have reverted to county ownership, and some of them have been purchased by the State, but most of them are privately owned, although——

Mr. CELLER. How long would it take to have a profitable venture if you start growing poplar? Ten years? Fifteen years? How long does it take a poplar tree to grow before you cut it down for pulp?

Dr. GRAVES. That would vary. We estimate that a normal rotation on a business basis might be 25 years, but there could be some thinnings taken at the 15th year.

Mr. CELLER. Fifteenth?

Mr. FRIEDMAN. Mr. Celler, with respect to that particular point, the answer depends on the ability of the landowner to wait for the highest dividends.

In some countries, where poplar is now planted on and grown on an intensive management basis, it is cultivated for pulpwood on a 10-year rotation; Argentina is an example. In Italy, poplar is grown on a plantation basis on a cycle closer to 15 years.

To the extent that the landowner can afford to wait for longer periods, he will get a higher return from his land because the rate of growth and value increment per year goes up very sharply before it levels out.

For purposes of illustration and analysis in this report, we have used rotation periods of 15 years and 25 years, respectively, to compare plantation investment and operating costs with projected returns.

Mr. MCCULLOCH. Might I interrupt there?

Do any of our States and does the Nation give any beneficial tax treatment to tree farmers on a basis such as you have just mentioned?

Mr. FRIEDMAN. Do you want to answer that, Dr. Graves?

Dr. GRAVES. Not directly, Mr. Congressman.

Mr. McCULLOCH. Will that be necessary if we go into production on a large scale, by reason of this 10- or 25-year interval?

Dr. GRAVES. As I understand it, there is some thought being given to that in some of the States in the Northeast. As to whether it would be necessary or not, I think that depends upon the attitude of the local assessors, when and if some of this land is developed.

At the present time that land, much of that land, has been tax delinquent. If it is actively developed, it is entirely possible that the local assessors would feel in an income-producing capacity it was able to pay somewhat higher taxes than normal forest land.

I think that would be something that would have to be studied a little more intensively.

Mr. CELLER. Mr. Chairman.

Mr. McCULLOCH. Mr. Celler.

Mr. CELLER. Would the conditions be favorable, Dr. Graves, for some new companies to go to New York State and buy this land for the period you indicate and still be able to compete with the old companies that manufacture newsprint?

Dr. GRAVES. Because of the scattered nature of these lands, it would be more desirable for a company to develop cooperative working relationships with the intermingled private landowners, the farmers themselves.

Mr. CELLER. Could such a group compete with the old companies who hold the standing timber in other parts of the country and Canada?

Mr. FRIEDMAN. Mr. Celler, our study of the economics of this operation indicates a very favorable prospective return from the wood grown in relation to estimated costs.

In the Northeast area generally, wood costs are a major problem in paper production. The costs of wood are relatively high, and are steadily increasing.

The possibility of planting and growing suitable wood in close proximity to a mill which is to use the wood offers important advantages from the standpoint of the economics of the wood supply. To the extent that your question relates to wood cost as a factor in ability to compete, I believe the answer is that the outlook is quite promising.

Mr. WALTER. Would a wide spread in cost for newsprint have any effect on the cost of housing?

Mr. FRIEDMAN. As I understand your question——

Mr. CELLER. Building materials?

Mr. FRIEDMAN. Do you mean would its use for newsprint so increase the demand as to raise the price generally?

Mr. WALTER. Yes.

Mr. FRIEDMAN. It may have quite the opposite effect. The kind of wood we are speaking of is pulpwood.

It is wood of a size and quality not suitable for lumber use generally.

Mr. MEADER. In other words, you would not build a house out of a poplar tree, would you?

Mr. FRIEDMAN. No, although poplar has quite a wide variety of wood uses and has been used for some types of building construction in the Midwest for many years.

Mr. MEADER. The type of tree you are talking about is not the type that would be used for housing?

Mr. FRIEDMAN. Mr. Walter spoke of hardwood generally.

The availability of a broader pulpwood market for hardwood than exists at present might well provide a better integrated marketing arrangement, and thus spread the total cost of growing the wood over a greater number of products or uses.

Mr. MCCULLOCH. If the members of the committee will permit, I regret suggesting that we bring the questioning to an end. I believe we must do that, due to the fact that time is growing short and we are still to hear several distinguished gentlemen who have traveled a long distance to testify.

Mr. CELLER. What about the growth in aspen trees?

Mr. FRIEDMAN. Aspen is a variety of poplar.

Mr. CELLER. Are they grown down along the Mississippi River banks?

Mr. FRIEDMAN. The southern counterpart of the aspen or the poplar is the cottonwood. In the bottom lands or unprotected flood lands on both sides of the Mississippi from Cairo, Ill., to Baton Rouge, La., the potential that exists for growing cottonwood would provide a tremendous source of raw material for newsprint or for other pulp products.

Mr. MEADER. Mr. Chairman, could I ask one question before we let this witness go?

Mr. MCCULLOCH. There is just this condition with which we are confronted. I understand that Mr. Friedman is a practicing consultant here in Washington and I am sure he would be pleased to come back for a lengthy discussion on this subject at a later date. As I have indicated, however, we have four witnesses who have come from very great distances, and unless the committee would wish to go on until 1 o'clock, I would prefer calling the out-of-town witnesses without delay.

However, Mr. Meader, you may proceed.

Mr. MEADER. I wanted to ask this question of this witness, Mr. Friedman, or someone engaged in this study: What has happened to the small newspaper publishers in the light of this increase in the cost in newsprint, which I guess Mr. Neubrech testified to?

Did your study encompass the effect on small newspaper publishers of this rise in cost?

Mr. FRIEDMAN. No; it did not.

Mr. MCCULLOCH. In the interest of saving time, the Chair is pleased to state that a former report of this committee delved into that field at great length under the able leadership of the gentleman from New York. I think that report will show a summary of the replies to the very great number of questionnaires that were sent out with respect to the effect of the increased price of newsprint on small newspapers.

That report, I think, was compiled before you became a member of our committee. Do you have a question, Mr. Willis?

Mr. WILLIS. Does this report delve into the utilization of willow trees for the development of this new industry you are talking about?

Mr. FRIEDMAN. Yes; it does.

Mr. WILLIS. I will read it if it has been gone into. The willow tree is a fast-growing tree.

Mr. FRIEDMAN. You will discover in consulting that report that we arranged for some trial runs of newsprint to be manufactured

from cottonwood and from willow at the United States Forest Products Laboratory at Madison, Wis., with very satisfactory results. Details of that investigation are contained in this report. Dr. Hall and Dr. Chidester, of the Forest Products Laboratory, are here today and will briefly describe those trial runs.

Mr. WILLIS. Does that section of the report deal with willow?

Mr. FRIEDMAN. Yes; it does.

Mr. MCCULLOCH. Thank you very much, Mr. Friedman.

The committee is pleased to have with us today two gentlemen from the Forest Products Laboratory at Madison, Wis., Dr. Hall and Dr. Chidester. They appear at the request of this committee and discuss this matter, through the courtesy of the Department of Agriculture, for the purpose of answering questions with respect to such research projects conducted by the laboratory for the Commerce Department study and with reference to the directions of further research in developing the use of hardwoods for newsprint.

We will be glad to hear from Dr. J. A. Hall, first. He is the Director of the United States Forest Products Laboratory at Madison, Wis.

STATEMENT OF DR. J. A. HALL, DIRECTOR, UNITED STATES FOREST PRODUCTS LABORATORY, MADISON, WIS.

Dr. HALL. In view of the fact that you seem to be somewhat pressed for time, I will make no formal statement. I will open myself up to whatever questions the committee wishes to address to me.

Mr. MCCULLOCH. Mr. Hall, I am not sure that that leaves us in a position to ask questions, but if there are any members of the committee who are sufficiently prepared to do that, we will be glad to have them submit questions.

Dr. HALL. I might help you out a little by stating in a preliminary way that we have been in this business of evaluating the pulping properties of wood for some 45 years at the Forest Products Laboratory.

As a matter of fact, we started an active campaign of research about 30 years ago to definitely expand the pulpwood base.

At that time we started what has become known as semichemical pulping research, and I believe Mr. Chidester can back me up on this, that the first plant was established at Knoxville some 30 years ago on chestnut wood.

That work has been expanded at a rate consistent with the resources of the laboratory over that long period of time so that the request transmitted by the committee to us for cooperation on this particular problem came as no great shock and no great surprise. We were quite happy to be able to participate and come out with not, I should say, final and conclusive results, but good, indicative results.

Mr. MCCULLOCH. Would you please briefly tell us what those indicative results were?

Dr. HALL. I would like to pass the ball to Mr. Chidester on this, sir.

Mr. MCCULLOCH. We will be glad to hear from the gentleman who is the Chief of the Pulp and Paper Division of the United States Forest Products Laboratory at Madison, Wis.

STATEMENT OF G. H. CHIDESTER, CHIEF, PULP AND PAPER DIVISION, UNITED STATES FOREST PRODUCTS LABORATORY, MADISON, WIS.

Mr. CHIDESTER. As a background for the work at the Laboratory in making newsprint from cottonwood, over the years we have done a considerable amount of work on the technical feasibility of using hardwoods in newsprint. Our work at the Laboratory on cottonwood newsprint is described in detail between pages 55 and 66 of the Department of Commerce report.

I should perhaps explain problems in using hardwoods. As you know, newsprint is ordinarily made of softwoods, spruce or southern pine, which have much longer fibers than hardwoods, and, therefore, make much stronger pulp and paper.

Groundwood pulp, which usually comprises about 80 percent of the newsprint blend, is very difficult to make from hardwoods, particularly the higher density hardwoods. The heavier hardwoods often produce less than one-fourth of the pulp strength of softwood groundwood pulp.

The approach to this problem has been the making of stronger pulps to compensate for the low strength of the hardwood groundwood pulps. This has been done by any 1 of 3 ways: that is, the use of semichemical processes, chemigroundwood, or the newer process called cold soda.

Semichemical pulps are made by giving wood chips a mild chemical treatment which softens them enough to enable a fiber separation in a disk mill, which is something like a flour mill.

The action is part chemical and part mechanical.

In the chemigroundwood process woodblocks are given a mild chemical treatment before grinding, to enable a better separation of stronger fibers.

The cold soda process is a variation of the semichemical process. Instead of cooking the fibers at high temperatures, we merely soak the chips in caustic soda for approximately 2 hours at room temperature. This is a much newer process which has had only limited use commercially, but we feel it has excellent possibilities for making low-cost pulps in a continuous way.

We found in the early work that we could use up to perhaps 70 percent or 80 percent of the more desirable species of hardwood in making newsprint. Cottonwood and aspen were better and more suitable than some of the higher density hardwoods. In the recent cottonwood trials we aimed at a 90-percent usage of the cottonwood starting with a blend of cottonwood groundwood with a long-fiber southern pine kraft.

The results were better than we expected. The color was excellent. The opacity would just about meet the requirements, I believe. The strength was very good.

The special pulps, that is the semichemical, cold soda, and chemiground pulp were included in the blends primarily for two reasons: One would be to compensate for any lack of strength in the cottonwood groundwood, and the other was to explore the possibilities of reducing the more expensive, long fiber content.

So some of the trials were made without any long fiber chemical pulp at all. The strength, the color, and other properties of these

papers, we believe, are adequate for the purpose. Similar blends using 10 percent of the longer fiber pulps was above average newsprint in strength.

We did not have an opportunity to fully explore the possibilities of calendering to produce a smooth surface for printing.

The results, we feel, were very promising.

However, in the conclusions, I feel that I should call attention to two points regarding the question of reproducibility of the results from our small paper machine, which is 13 inches wide and was operated at a speed of 75 feet per minute, compared to a large machine running up to perhaps 1,500 feet, or more, and much wider, of course.

The first point relates to the properties of papers on our small machine in relation to those made on large machines.

I will read from the report, from page 56.

> Experience at the Forest Products Laboratory over a period of years indicates the validity of comparisons between the properties of papers made from various furnishes on its equipment and the properties obtained from similar furnishes on commercial equipment. Such comparisons have been found to be especially valid with respect to short fiber furnishes, such as the newsprint pulps used in the runs described in this report.

Now, that refers to the properties of the sheet of paper. In other words, we feel that the properties on our machine are quite comparable within reasonable limits to those obtained on a large machine.

However, the second point relates to the runnability or difficulty of handling the pulp on the machine as it affects operating efficiently on large machines, breaks in production and so forth.

Those are questions that it is very difficult to determine from the small machine. I would say about all we can be certain about on that point is that if we have trouble on the small machine the same pulp is likely to give more trouble on a larger machine.

So I would not like to leave the impression that anyone could take the pulp blends exactly as we have used them and run them in the same proportions on these large paper machines. At the start it would be desirable to use larger proportions of long fiber pulps and then reduce them to the feasible limit.

Mr. CRUMPACKER. I understand that this blend from softwoods and hardwoods, the pulps, can add to the strength of the paper, the end product, and that you also blend the semichemically produced pulps with groundwood pulps.

Mr. CHIDESTER. The first series consisted of 90 percent cottonwood which was a blend of groundwood and the special pulp, and the other 10 percent was a long fiber, conventional semibleached southern pine sulfate.

Mr. CRUMPACKER. Would it be possible to improve the quality by blending pulp made from wastepaper rather than from softwoods?

Mr. CHIDESTER. Some qualities of waste paper definitely would produce long fiber pulps. Other qualities such as newsprint could probably be used to replace groundwood pulp, but I believe the difficulty with that is largely in the darker color.

Mr. CRUMPACKER. The paper produced was of the newsprint variety?

Mr. CHIDESTER. Yes, sir.

Mr. CRUMPACKER. And you did not extend your experiments into other types of papers?

Mr. CHIDESTER. Not in this case; no.

Dr. HALL. We have carried on a great deal of research on hardwood pulps, and various kinds for use here in other manufacturing fields in addition to newsprint.

Mr. CRUMPACKER. On other types of paper, I assume that the color might not necessarily be of such importance.

Dr. HALL. In some, color is of less importance, and in some color is of greater importance. One cannot make a general statement about that.

Mr. MEADER. Might I ask Mr. Chidester this question: Your experiments dealt only with virgin pulp? You did not deal with the question of using wastepaper and deinking?

Mr. CHIDESTER. That is right.

Going back to the first question, we ran other series of papers from cottonwood where we eliminated the 10 percent of the softwood long fiber kraft pulp.

Getting back to the point of runnability or efficiency of machine operation, that point is covered in the report in the sentence preceding the one I just read, and I might read that here.

> On the other hand, it is common practice to use a certain amount of long-fiber pulps in conventional high-speed operation, the amount of such pulps needed, if any, can only be determined by mill-scale trials.

I believe that summarizes the work we did.

The CHAIRMAN. Thank you, Mr. Chidester, and Dr. Hall.

Now, we have Mr. Robert E. O'Connor, assistant executive secretary of the American Paper and Pulp Association and Mr. Robert E. Canfield, secretary-treasurer of the Groundwood Paper Manufacturers Association.

Mr. MECARTNEY. May I say this before the witnesses from the Laboratory leave the stand?

The pamphlets distributed to the members of the committee together with the series of pictures that were furnished by the Laboratory were supplied at my request for the purpose of showing to the committee the extent and size of the papermaking machine and in a broad way the extent and character of the equipment of the Forest Products Laboratory's Pulp and Paper Division, by the use of which these trial runs were made.

It was primarily to dispel any idea that this was a test tube or hand sheet operation of the kind that some of us might otherwise imagine.

STATEMENT OF ROBERT E. O'CONNOR, ASSISTANT EXECUTIVE SECRETARY, AMERICAN PAPER AND PULP ASSOCIATION

Mr. O'CONNOR. I am appearing with Mr. Canfield. I recognize your time limitations and while I have a prepared statement, I will simply file it with the committee and will merely try to highlight some aspects of it orally.

The CHAIRMAN. The statement will appear in the record in full.

(The statement referred to is as follows:)

> My name is Robert E. O'Connor, and I am appearing in behalf of the American Paper and Pulp Association which is the overall association of pulp and paper manufacturers.

I am presenting testimony of a general nature on the progress made by manufacturers of paper in the use of hardwoods, as a part of these hearings on the report, Newsprint Production From Hardwoods, prepared for this committee by the Department of Commerce.

The pulp and paper industry is a major industry in this country, the sales of paper and allied products in 1953 amounting to almost $9 billion. It provides direct employment for about 275,000 men and women in 38 States, and has an annual payroll of well over $1 billion. In 1953, it produced 26.5 million tons of paper and paperboard, and 17.5 million tons of woodpulp. It consumed 28 million cords of wood.

This industry has long realized that its future growth is, to a large degree dependent upon the economic availability of an adequate supply of the fibers used in the manufacture of paper. For this reason, its technicians have constantly sought to develop techniques and processes whereby additional sources of papermaking fibers might be developed, and its members have actively engaged in programs calculated to insure an expanding raw-material base.

In the early part of the 19th century, when cotton and linen rags were the sources of papermaking fibers, it became clear that if the industry was to expand its output to supply adequately the growing demand for paper, new raw materials would have to be developed. There followed a period of experimentation with a great variety of fibers, including straw, grasses, cornstalks, beet-fiber, and wood, which culminated with the successful development of a technique for producing groundwood pulp. Woodpulp was commercially produced in the United States for the first time in 1857. This discovery, along with the later development of chemical pulping processes, provided the basis for our modern industry. Today, wood in the form of pulp or wastepaper is the source of 98 percent of the industry's fiber requirements.

Initially, our paper industry was based on the availability of spruce and balsam fir in the Northeastern States and, somewhat later, on spruce in the Lake States region. For many years, these areas supplied the bulk of the United States requirements for paper. When it was indicated that the wood supplies of these areas were unequal to the task of supplying the Nation's growing needs, it also became evident that the logical expansion of the industry was in the Pacific Northwest and South. Although the woods of these areas—Douglas fir and hemlock in the Northwest and pine in the South—had long been considered undesirable, industry technicians devised methods whereby these woods could successfully be processed to produce pulp and paper of high quality. The importance of these developments to the industry and the economy is indicated by the fact that, whereas in 1929, the combined production of these two areas amounted to only 16 percent of the national total, by 1952 their output was equal to 46 percent of our total production. This, as I have indicated, has developed from the species of wood which not too many years ago were not considered desirable for pulping.

The success of the industry, in the examples I have given, indicates its awareness of the problem of raw-material supply. More important, it shows that the industry has initiated successful programs to effect a solution. It is for these reasons that I have introduced this bit of history.

The use of hardwood by the paper industry is not new. Before World War II, consumption, largely in the production of pulp by the soda process, amounted to about 700,000 cords. What is relatively new, however, has been the rapid increase in the consumption of hardwoods by the sulfate, semichemical, and, recently, chemigroundwood process. These processes are best suited to the pulping of hardwoods. Since 1946, in the Northeast alone the production of pulp by these methods has risen from 46,000 to 300,000 tons, an increase of about 600 percent. It is anticipated that increased emphasis on these processes will be accompanied by the rising use of hardwoods. This growth is reflected throughout the industry in the greatly expanded semichemical pulp capacity which has risen from a total of 10 tons daily in 1925 to an estimated figure in 1954 of 4,190 tons per day. All of these new methods and machinery will undoubtedly be further improved to broaden the areas of possible application for hardwood fibers, and increase the relative importance of these species as a raw-material supply.

Since 1946, the consumption of pulpwood by United States mills has increased from about 18 to 28 million cords. The use of softwoods, primarily because of the large increase that has occurred in the use of Southern pine, has risen from slightly more than 15 to 24 million cords, equal to 54 percent. The quantity of hardwoods used, however, has increased from 2.4 to 4.4 million cords, equal to 80 percent.

An excellent illustration of the successful efforts of the industry to adjust its processes to the available timber supplies is found in the experience of the Lake States mills. In that area, as the supplies of spruce dwindled, the industry, in addition to using increased amounts of jack pine and hemlock, which once had been considered to be unsatisfactory, has turned to poplar as a source of fiber.

Beginning in 1920, with 3,000 cords of poplar, representing two-tenths of 1 percent of the area requirements, the quantity used has steadily increased until now almost a million cords, about 35 percent of the requirements, consists of this species. The importance of this development to the area is further indicated by the fact that in the postwar period it was only because of greater utilization of hardwoods that the industry was able to continue to grow.

Since 1946, the use of hardwoods in the Lake States has increased from 503,017 cords to 1,067,000 cords, while the use of softwoods has actually decreased from a figure of 2,051,017 cords to 1,973,000 cords. Total consumption in this area rose from 2,554,034 cords to 3,040,000 cords, reflecting an overall increase in cords consumed of 19 percent. The impact of the vastly increased usage of hardwoods is reflected in the percentage gain in these species of 112 percent, with a concurrent decrease of 4 percent in the consumption of softwoods.

In the Northeastern States, another major paper-producing area where a dwindling supply of softwood species at one time appeared to limit possibilities for growth, the data indicate a similar occurrence. Thus, improved pulping and bleaching techniques and the development of pulp-refining equipment have made possible the increased use of hardwoods since 1946.

In 1946, pulpwood consumption in this area amounted to approximately 3,464,856 cords which consisted of 2,917,986 cords of softwoods, and 546,870 cords of hardwoods. For the year 1953, pulpwood consumption in the Northeast amounted to 3,845,000 cords, of which, 2,942,000 cords were softwoods and 903,000 cords were hardwoods. Thus, in a brief span of 8 years, there was an increase of 11 percent in the consumption of pulpwood. While the increase in the use of softwoods has amounted to only 1 percent, the consumption of hardwoods has risen by 65 percent. This substantial increase, percentagewise, in the consumption of hardwoods has been reflected in all regions of the country except the Pacific Northwest; and possibly its most dramatic increase has been in the South.

The mills in the South, despite the large supplies of relatively fast-growing pine available, have recognized the need for improving their wood supply. Taking advantage of the fact that an excellent quantity of corrugating material can be produced from hardwood by the semichemical process, the industry has, since 1946, increased its annual consumption of hardwoods by about 1 million cords, equal to 204 percent. Thus, from a total of 465,355 cords of hardwood consumed in 1946, usage of hardwood had increased by 1953 to a total of 1,415,000 cords. While there was also a substantial increase in the consumption of cords of softwood, it has been less spectacular than the increase in the use of hardwoods which now comprise 10 percent of the total of wood used, from a figure of 6 percent in 1946.

In summation, the change in pulpwood consumption, by regions, during the period 1946–53, was as follows:

[Percent]

	Softwoods	Hardwoods	Total
Northeast	+1	+65	+11
Appalachian	+42	+8	+8
Lake States	−4	+112	+19
South	+89	+204	+96
Total	+54	+80	+58

But the industry has not been content to explore only the possibilities of greater use of hardwoods. It has, in addition, made great strides in the utilization of its wood supply. Recently, pulp mills, frequently in conjunction with lumber mills, veneer plants, or other wood-using industries, have moved toward full utilization of trees by jointly developing programs for the chipping of mill waste and converting it into pulp, in an adjacent or nearby pulp mill. Some pulp mills now operate almost entirely with wood which in the past would have

been burned. It is estimated that between 25 and 30 percent of the wood requirements of mills in the Pacific Northwest are obtained from so-called mill waste. This practice has been localized to a degree in the Northwest, but a modest beginning has been made in the South, and it will undoubtedly expand in the future.

Further, the industry, being aware that trees, too, have their individual differences, is giving increased attention to the study of forest genetics. Its interest lies not only in obtaining a large quantity but also in the growth of high-quality fibers that will lend themselves to the production of better quality paper and paperboard. It is learning, too, that the number of cords grown per acre is not so decisive as the quantity of pulp that can be produced from the wood grown per acre and, for this reason, is paying increased attention to the growing of high density wood.

This is a long-range program, as any forestry program must be; and the tangible benefits will not accrue for a long period of time. But it does illustrate the quality and the range of thinking within the industry and demonstrates again—if further demonstration is necessary—its awareness of the resolution to solve its problems.

Finally, it must be remembered that the paper industry is highly competitive, and that the products of each manufacturer must meet the rigid specifications of the consumer. Therefore, it is not enough merely to be able to produce paper from the pulp of a given species of wood. The fiber of each species differs as to length, strength, and as to other physical characteristics. Each type of wood has its own unique reaction in the pulping and bleaching process and must be treated differently in the papermaking operations. And, of course, the final product, paper, will have its own physical characteristics of strength, opacity, printability, etc. There are many variables which must be accommodated economically before commercial use becomes practical. This requires time, effort, and the expenditure of many dollars on the part of the industry. The industry's past record indicates that it has always been willing to do exactly this, and I have no doubt that, in the future as in the past, the industry will not overlook any opportunities to strengthen its position and insure its future.

Mr. O'CONNOR. Thank you.

Mr. Canfield will discuss some of the specific applications of hardwoods in the industry.

I might state initially that the paper and pulp industry has always been aware of the necessity of expanding its raw material base, but since we are discussing now solely the hardwood question, I would comment that its use in the industry is far from new.

Before World War II, consumption of hardwood, largely in the production of pulp by the soda process, amounted to about 700,000 cords.

Since 1946 the consumption of pulpwood has increased from about 18 million to 28 million cords.

The use of softwoods, primarily because of the large increase that has occurred in the use of southern pine, has risen from slightly more than 15 million to 24 million cords, equal to approximately 54 percent.

The quantity of hardwoods used, however, has increased from 2 million, 2,400,000, to 4 million, 4,400,000 cords, equal to 80 percent.

Mr. CRUMPACKER. May I ask a question at this point, Mr. Chairman?

The CHAIRMAN. Yes.

Mr. CRUMPACKER. You mentioned the use of southern softwoods. Wasn't there a considerable problem over quite a few years in regard to the removal of the pitch from southern softwoods to make them usable?

Mr. CANFIELD. There was, if you are talking about groundwood, but not so far as kraft. We are talking in terms of overall use of hardwood.

The use of southern pine for groundwood pulp, and, therefore, its use in newsprint, is fairly recent.

Mr. CRUMPACKER. But the technical problems have been largely overcome?

Mr. CANFIELD. They have been substantially completely overcome; yes, sir.

There are two highly successful newsprint plants in the South and a new one, larger than either, just starting to produce.

Mr. CRUMPACKER. And they are able to compete on an economical basis with the northern softwoods?

Mr. CANFIELD. Yes, sir.

Mr. O'CONNOR. One of the most spectacular increases in the use of hardwoods for pulping processes is evidenced by the experience of the Lake States mills.

Beginning in 1920, with 3,000 cords of poplar, representing two-tenths of 1 percent of the area requirements annually, the quantity used has steadily increased until now almost a million cords, about 35 percent of the requirements, consists of this species. Since 1946, in the Lake States—and this is the only area which reflects such a change—there has been an actual decrease in the use of softwoods in meeting the pulping requirements of the area.

By way of a very brief summary, and I will skip that part of the textual material which contains detailed statistics, I might break down for you by regions the increased usage of hardwoods.

Since 1946, there has been an increase of 65 percent in the use of hardwoods in the Northeast.

In the Appalachian region there was an increase of 8 percent, and that is the only region where there is now a greater amount of hardwood used than softwood. In the Lake States there was a 112-percent increase. In the South there was a 204-percent increase. There was a total increase, nationwide, of some 80 percent in the use of hardwoods during the period 1946–53.

The total number of cords of hardwood used in 1953 amounted to 4,378,000 cords, equal to 16 percent of the total cordage required.

I might comment briefly on two other aspects which bear upon this expansion of the raw material base. One is the greatly increased utilization by mills, notably in the Pacific Northwest, of mill waste and residues, chips, slabs, and so forth.

Another great area of increasing attention in the future, and it is being studied at considerable length and in considerable detail now, is the subject of forest genetics. Companies are now devoting considerably more attention to an increased yield of fiber per acre, rather than an increase solely in cords per acre, with the emphasis upon attempts to grow a high-density wood.

I believe that will cover what aspects of the subject I had wished to present, and as I stated, the full statement will be presented to the committee.

Mr. Canfield will be able to go into specific details on this point, and also give some treatment to the economic considerations involved in hardwood pulp production.

Mr. CELLER. Mr. Chairman, there is a bill pending before the House today in which I am interested, the so-called trout bill, and I should leave for the floor in a few minutes. I wonder if I could read a brief statement at this time.

The CHAIRMAN. Do you want to make the statement at this time, or following Mr. Canfield's testimony?

Mr. CELLER. Yes; after his testimony.

The CHAIRMAN. All right, we will hear from Mr. Canfield now.

STATEMENT OF ROBERT E. CANFIELD, SECRETARY-TREASURER OF THE GROUNDWOOD PAPER MANUFACTURERS ASSOCIATION

Mr. CANFIELD. I thought it would perhaps be helpful to talk about the operation of a mill which uses more poplar than any other mill in the country.

This ties in with Mr. O'Connor's paper which has to do with the fact that this hardwood usage in paper is not new, not startling, and not insignificant in its amount.

It would be a mistake for the committee to get that idea, and I am sure Mr. Friedman would agree with me.

As a matter of fact, he made exactly this statement to me earlier before this hearing started.

Hardwoods have been used for a considerable period of time and their use is very rapidly growing in the industry. Its use in newsprint has been rather small simply because of the character of the pulp that you get out of the hardwoods.

Pulp, unfortunately, is not a single thing. The kind of pulp and the characteristics you get out of the different woods differ very widely and pulps are made by various processes and used in the way that they are most suitable for use.

Poplar has been used for many years and, taking the State of Minnesota for instance, where this particular company is located, the most readily available species of wood is poplar. It costs quite a bit less than spruce, as a result of which both with availability and low cost it is obvious that the company would use just as much as they possibly could.

The company happens to be engaged in the manufacture of many types of paper, including newsprints. They have a newsprint mill across the border in Canada, and they have another paper mill in Canada and one here in the United States and they have had an extensive experience in the practical use of poplar groundwood in manufacturing various kinds of paper.

The amount of use in 1940, just to indicate that it is not an experimental deal by a long shot, exclusive of newsprint and just in their other grades of paper, was 257,400 cords of wood, which is quite a woodpile for one company.

Of that, 56,300 cords was poplar and the balance coniferous woods, such as spruce, balsam, and jack pine.

In that 1940 period, 22 percent of their wood used was poplar.

In 1953, the total consumption was 429,700 cords, and 44 percent was poplar, 189,300 cords.

In their strictly newsprint operations they also used poplar to the maximum extent that they have found practical and this ties in with the problem that Dr. Chidester mentioned that ability to use pulp on high-speed machines may vary quite a bit from what you can get on a 75-foot-a-minute laboratory machine.

They have found it, so far at least, impractical to use more than about 10 percent of poplar groundwood in the manufacture of news-

print, and bear in mind that the poplar costs them a great deal less than spruce, and they would rather use it if they could, which is a sort of pragmatic test.

Actually the reason for it is that poplar groundwood produces a very fine, short-fibered pulp.

Either one of two things happens when you use it in two great quantities. If you have too coarse a wire on the machine, you lose an awful lot of it which goes on through the wire.

If you use a finer wire on the machine, which is not economical really for newsprint production because you do not need it, then you do not lose it that way, but it slows down the drainage of water out of the sheet to the point where you cannot operate at the speeds that the machine is calculated to operate at.

Those are limiting factors. There is another which is characteristic of the sheet that comes from using poplar groundwood. The short fiber makes a bulkier sheet, which means lower finishes.

The newspaper customers do not like a low finish. They like a pretty good finish in order to get good reproduction of halftones.

The company's experience has shown until up to date, at least, that something less than 10 percent is optimum in the commercial production of newsprint of poplar groundwood.

The thing Dr. Chidester mentioned of semichemical pulp is something else again, but then you would be replacing groundwood pulp with a chemical pulp, and what the economics of that is is not hard to tell.

The minute you use any chemical you add to the cost of producing pulp. The cost factor is of supreme interest to the newspaper publisher.

Where the pulp has been used most successfully is where those peculiar characteristics of it are what makes the sheet good, namely, in insulating board where you want a fluffy, thick sheet, to trap air particles so that it makes a good insulation.

The company I am talking about is one of the largest producers of insulating board in the country, and that board is made 100 percent of poplar groundwood.

In other forms of printing paper they use higher percentages of poplar than they do and can in newsprint. For instance, the groundwood printing paper intended for use in publishing these small pocket books, and stuff like that, or even hard-bound books, frequently the publisher wants a bulkier sheet than normal.

There poplar groundwood is excellent. It also is a very bright and clear pulp which makes good brightness.

One typical sheet has as much as 20 percent poplar groundwood in the sheet. About 40 percent of spruce or balsan groundwood was also used in this sheet of paper of which I am talking of now, and 20 percent bleached kraft and 20 percent bleached sulfite.

There is the practical picture at the present time.

Poplar groundwood has been used in newsprint for some time. In other classes of paper it is also used. It is most satisfactory in insulating boards.

Its use is limited apparently by its characteristics so that it would hardly be practical to substitute poplar groundwood for coniferous groundwoods in newsprint manufacture.

If a way can be found to do it, the producers of paper would certainly like to do it because the cost is less and it is more readily available.

Mr. MEADER. Approximately how much less?

Mr. CANFIELD. Well, currently, in northern Minnesota, the price of poplar is about $15 a cord, and the price of spruce is about $24 a cord, but that is a figure you want to look out for because the cost difference is not quite that much. You do not get quite as much out of the poplar as the spruce, so the difference is somewhat less than that.

However, it is significantly less and, therefore, highly desirable to use to the maximum extent practicable.

I just thought that practical application might be of interest to the committee here, mostly so that you will not get misled into thinking that there is something untried that may be prefectly wonderful.

It has been tried and is being tried. The companies are constantly engaged in research on how better to use poplar because they are perfectly well aware that it is a fast-growing tree and costs them less. They are putting a great deal of effort into this because wood being the biggest single item of cost to them, they are intensely interested.

A new development in hardwood usage, specifically the chemi-ground-wood processes, is something that well may change the picture substantially. That process is in full-scale commercial operation at the moment by the Great Northern Paper Co. and will ultimately be on an even larger scale. It gives a great deal of promise, but it will increase the cost over straight mechanical pulp.

That is all I have to say.

The CHAIRMAN. Do you have something you want to say at this time, Mr. Celler?

Mr. CELLER. Yes, Mr. Chairman.

It is highly gratifying to me to have watched the progress of the work of the Department of Commerce in fostering expansion of newsprint production through use of new technologies and raw materials.

I recall the initiation of this work in the 82d Congress when the Committee on the Judiciary, of which I was then chairman, first secured the cooperation of the Department of Commerce in undertaking this task.

This project had bipartisan support of the committee then as it has now. That cooperation has extended into the present Congress and serves as an excellent example of cooperation between the legislative and executive branches of the Government working together on a matter of high importance to the economic well-being of this country, and the maintenance of a free and vigorous press.

The aim of this cooperative effort is to determine the opportunities which exist for the expansion of an essential industry by private capital and enterprise, so as to assure a healthy state of competition among producers and an adequate supply of newsprint at reasonable prices for the newspaper publishers who are the consumers.

I am impressed with the evidence before us of the thoroughness and significance of the data amassed, the thoughtfulness and soundness of the reasoning, and the integrity with which the Department of Commerce has approached this assignment.

The Department is to be commended for submitting an outstanding piece of work to the committee.

To my mind, the finding of the Department of Commerce that it appears feasible to use hardwoods on a substantial scale in the production of newsprint opens up the prospect of tapping a great new source of raw material which, heretofore, has been insufficiently utilized.

As this study points out, the commercial beginnings have been made. The experience and ingenuity of American industry can be relied upon to overcome the remaining problems.

The CHAIRMAN. I want to thank all the witnesses who appeared here today. I think your testimony has been very illuminating. That, together with the report, will be taken under consideration by the committee. Thank you again.

The committee will now stand adjourned.

(Thereupon, at 12:20 p. m., the committee was adjourned.)

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